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VERIFICATION OF TRANSLATION

I, Kenji ITAMI, being a citizen of Japan, residing at 20-9, Onoharahigashi 4-chome, Minoh-shi, Osaka-fu, Japan, do solemnly and sincerely declare that the attached hereto is true and faithful English translation of the priority document, Japanese Utility Model Application No. 068371/1991.

Dated this 25th day of December, 1995.

A handwritten signature in black ink, appearing to read "Kenji ITAMI", written over a horizontal line.

Kenji ITAMI

PATENT OFFICE
JAPANESE GOVERNMENT

This is to certify that the annexed is a true copy of the following application as filed with this Office.

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Application Number : Utility Model Appln. No. 068371/1991

Applicant : Seed Rubber Company Limited

December 1, 1995

Director-General,

Patent Office

Yuji KIYOKAWA

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【Title of the device 】 Coating film transfer tool

【Number of claims】 1

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 【Document name】 Specification One copy

 【Document name】 Drawings One copy

 【Document name】 Abstract One copy

 【Number of general power of attorney】 9000177

[Document name] Specification

[Title of the device] COATING FILM TRANSFER TOOL

[Claim]

[Claim 1] A coating film transfer tool comprising a pay-out reel with a coating film transfer tape wound thereon and a winding reel for recovering a used coating film transfer tape, disposed freely rotatable in a case, and a peak-shaped head for the transfer of the coating film projected from one end of the case, characterized in that one end of said coating film transfer tape fed from said pay-out reel is twisted by 90° ahead of said head and then, past the peak of said head, is either restored to the original state or further twisted by 90° before it is wound by said winding reel.

[Detailed description of the device]

[0001]

[Field of the industrial utilization]

The present device relates to a coating film transfer tool for transferring a coating film such as a corrective coating layer and an adhesive layer on a coating film transfer tape onto paper surface or the like.

[0002]

[Conventional art]

As an example of this kind of coating film transfer tool, there has hitherto been known a tool for

erasing characters or the like as disclosed in Japanese Laid-open Patent Publication No. 57370/1986. As seen from Fig. 6, this erasing tool comprises a case 1, two supporting shafts 2 and 3 embedded therein, which have set thereon a pay-out reel 5 with a coating film transfer tape 4 wound thereon and a winding reel 6 for winding a used coating film transfer tape 4 to be freely rotatable, and a peak-shaped coating film transfer head 7 with a peak portion 8 projecting out of the case 1, and one end of the coating film transfer tape 4 fed from the pay-out reel 5 is led past a guide pin 9 and turned back by the peak portion 8 of the head 7 and wound by the winding reel 6. The winding reel 6 has fixed thereto a winding dial 10, a part of which projects out of the case 1 for manipulation. The coating film transfer tape 4 has a layer of white corrective paint formed on one side thereof over a release agent layer and a layer of adhesive thereupon, and is wound with the adhesive layer outward.

[0003]

For erasing characters or the like by the use of the erasing tool of the above construction, the case 1 is held with both sides in a hand with the head 7 facing downward and, with the coating film transfer tape 4 being pressed against characters or the like to be erased by the peak portion 8 of the head 7, the case 1 is moved in the

longitudinal direction (the direction of the arrow "a" in the figure). The corrective paint layer of the coating film transfer tape 4 is then pressed by the peak portion 8 onto the characters or the like, the corrective paint layer being released from the substrate film with the release agent layer and transferred thereon. As the case 1 moves, a new coating film transfer film 4 is fed from the pay-out reel 5 and, thus, the desired length of the corrective paint layer being transferred on the characters or the like for erasing thereof. The used substrate tape with only the adhesive agent layer remaining thereon is wound by the winding reel 6 with care lest it should slacken by means of the winding dial 10.

[0004]

[Problems to be solved by the device]

The prior art erasing tool described above, which had to be moved in the longitudinal direction of the coating film transfer tape 4 with both sides of the case 1 held with fingers, had something to be desired about stability and reliability since the elbow had to be lifted and there was a problem that it was difficult to set precisely the peak portion on the spot where erasing had to be done.

[0005]

The present device relates to an improvement of the prior art erasing tool in which the case is moved

perpendicular to the longitudinal direction of the coating film transfer tape so as to provide a coating film transfer tool with which erasing et cetera can be done stably and reliably.

[0006]

[Means to solve the problems]

In order to attain the above-mentioned object, the coating film transfer tool of the present device comprises a pay-out reel having a coating film transfer tape wound thereon and a winding reel for winding used coating film transfer tape to be freely rotatable in a case and a peak-shaped head for coating film transfer at one end of the case, and so arranged that one end of the coating film transfer tape is fed from the pay-out reel and twisted by 90 ° ahead of the head and restored to the original state or further twisted by 90 ° after having passed the peak portion of the head and then wound by the winding reel.

[0007]

[Action]

In the coating film transfer tool of the above-mentioned construction, as a coating film transfer tape, for example, a substrate tape with a paint layer formed on one side thereof over a release agent layer, and an adhesive layer formed thereon. In order to transfer the paint layer of the coating film transfer tape onto the paper

surface, the coating film transfer tape, which passes the peak portion of the head, with said transfer tape being twisted by 90° , the case has to be moved in a direction perpendicular to the longitudinal direction of the coating film transfer tape with said tape being pressed against the paper surface or the like by the peak portion of the head.

It is thereby possible that the paint layer of the coating film transfer tape under the peak portion of the head is stuck to the paper surface through the adhesive layer, at the same time, being released from the substrate tape through the release agent layer. As the case moves, a new coating film transfer tape is fed from the pay-out reel and it is supplied to the peak portion of the head after being twisted by 90° on this side of the head. Thus, the desired length of the paint layer of the coating film transfer tape is transferred onto the paper surface or the like. The used substrate tape with the release layer alone remaining thereon is wound by the winding reel with the twisting restored.

If, as another example of the coating film transfer tape, an adhesive agent layer alone is formed on one side of the substrate tape over a release agent layer, the adhesive agent layer alone is transferred onto the paper surface or the like and, in this way, the present device may be used as a pasting tool.

[0008]

[Embodiment]

Described below is an embodiment of the present device with reference to Figs. 1 and 2.

As seen from Figs. 1 and 2, three supporting shafts 12, 13, 14 embedded in a case 11 support freely rotatable thereon a pay-out reel 15, a winding reel 16 and a winding dial 17 and at the front end of the case 11 there is provided projectingly a coating film transfer head 18, and the pay-out reel 15 has wound thereon a coating film transfer tape 19.

[0009]

The case 11 has formed therein slits 20 through which the coating film transfer tape 19 passes at the base of the head 18 on both sides thereof (See Fig. 2.), three guide pins 21, 22, 23 and a ratchet arm 24 are provided and the side opening is closed by the lid 25 (See Fig. 2.). The ratchet arm 24 has stopper claws 27 formed at the ends of a pair of elastic arms 26, these stopper claws 27 are engaged with claws 29 of two ratchet wheels 28 described later freely disengageable by the elasticity of the elastic arms 26 to prevent free rotation of the pay-out reel 15 and the winding reel 16.

[0010]

The pay-out reel 15 and winding reel 16 have

formed as one body the ratchet wheels 28 having a multiplicity of the claws 29 on their outer peripheries. The winding dial 17 has formed as one body a ratchet wheel 30 and a multiplicity of claws 31 formed on the outer periphery of the ratchet wheel 30 are engaged with the claws 29 of the ratchet wheel 28 of the winding reel 16.

[0011]

The head 18 is peak-shaped as shown in Fig. 2 and is made up of a triangle-sectioned peak portion 32 with guide flanges 33 formed on both sides thereof.

[0012]

The coating film transfer tape 19 has one end thereof fed before use from the pay-out reel 15 via the guide pin 21, is twisted by 90° by the guide pin 22 ahead of the head 18 to be led out through one slit 20 and then past the peak portion 32 of the head 18 through the other slit 20 into the case 11 and, with the twisting restored before it reaches the guide pin 23, is wound on the wind reel 16. Then, needless to say, it is to be so set that the coating film to be transferred should be on the outside of the loop.

The twisted tape may as well be further twisted by 90° instead of being restored to the original state.

[0013]

When the coating film transfer tool of the above-mentioned construction is used as an eraser of characters

or the like , the coating film transfer tape 19 may, for example, be made by forming, on one side of a substrate film (25~38 μ m or so in thickness) of plastics such as a polyester film and an acetate film a release agent layer of, for example, a vinyl chloride-vinyl acetate copolymer and a low-molecular polyethylene, a white corrective paint layer thereon and an adhesive agent (pressure-sensitive adhesive agent) such as a polyurethane on the top thereof.

[0014]

In order to erase characters or the like with this coating film transfer tape 19, the coating film transfer tape 19 passes the peak portion 32 of the head 18 with being twisted by 90° , hence the case 11 has to be moved in a direction perpendicular to the longitudinal direction of the coating film transfer tape 19 (the direction of the arrow A in Fig. 2) with the adhesive layer side of the coating film transfer tape 19 being pressed against characters or the like by the peak portion 32. Then, the corrective paint layer of the coating film transfer tape 19 is stuck onto characters or the like by the adhesive agent layer and it is released from the substrate film by means of the release agent layer formed thereon. As the case 11 moves, a new coating film transfer tape 19 is fed from the pay-out reel 15. Then, the tension of the coating film transfer tape 19 acts on the pay-out reel 15 as torque,

the stopper claws 27 are disengaged from the claws 29 of the ratchet wheel 28 by the elasticity of the elastic arm 26, this allowing rotation of the pay-out reel 15. Thus, the corrective paint layer is transferred onto characters or the like for erasing thereof.

[0015]

The used substrate tape with the release agent layer alone remaining thereon is wound unslackened by the winding reel 16 which is driven to rotate by the winding dial 17 through the claws 29, 31 of both ratchet wheels 28, 30 in engagement. In this case, as in the case of feeding, the stopper claws 27 are disengaged from the claws 29 of the ratchet wheel 28 by the elasticity of the elastic arm 26, this allowing rotation of the winding reel 16.

[0016]

When the coating film transfer tool of the above construction is used as a pasting tool, a substrate tape with an adhesive layer alone formed over a release agent layer on one side thereof is to be used instead of the coating film transfer tape 19. The adhesive layer alone is then transferred onto the paper surface in the same manner as in the case of the erasing tool described above to enable pasting.

[0017]

Although in this embodiment the used coating film

transfer tape 19 is wound by the winding reel 16 manually, it is also possible to do it automatically as shown in Figs. 3 ~ 5. In Figs. 3~5, however, like parts shown in Figs. 1 and 2 are to be designated by like symbols.

[0018]

In this embodiment, as shown in Figs. 3 and 4, a pay-out reel 41 and a winding reel 42 are supported free to rotate on the supporting shafts 12 and 13 embedded in the case 11. The pay-out reel 41 is made up of a rim 44 with a large gear 43 formed on its outer periphery, a center boss 45, four radial spokes 46 connecting the rim 44 and the boss 45 and the pay-out cylinder 47 set on the outer periphery of the boss 45 free to rotate, and the coating film transfer tape 19 wound on the outer periphery of the pay-out cylinder 47. The boss 45 is made up of an inner cylinder 48 and outer cylinder 49 with a given gap therebetween, the base end of the outer cylinder 49 connected with the inner cylinder 48 and the supporting shaft 12 inserted through the through hole of the inner cylinder 48 free to rotate.

[0019]

On the side wall of the outer cylinder 49, as shown in Fig. 5, there are formed a pair of clutch arms 51 having clutch claws 50 at its forward end and the clutch claws 50 are engaged disengageably by the elasticity of the

clutch arm 51 with a plurality of claws 52 formed annularly on the forward inner periphery of the pay-out cylinder 47. Amid between confronting pairs of spokes 46, there are formed a pair of arc-shaped ratchet arms 54 having stopper claws 53 at its forward end, the stopper claws 53 engaged with a plurality of claws 55 formed annularly on the inside of the case 11 freely disengageable by the elasticity of the ratchet arm 54, this preventing free rotation of the pay-out reel 41 and the winding reel 42.

[0020]

Meanwhile, the winding reel 42 is made up of a tape-guiding flange 57 on the base end of the winding cylinder 56 with the used coating film transfer tape 19 wound on its outer periphery and a small gear 58 on the back of the flange 57 engaging with the large gear 43, and a supporting shaft 13 is set freely rotatable through the through hole of the winding cylinder 56.

[0021]

When, in the above-mentioned makeup, the coating film transfer tape 19 is fed from the pay-out reel 41, the tension of the coating film transfer tape 19 acts as a rotation torque on the pay-out reel 41 and the stopper claw 53 is disengaged from the claw 55 by the elasticity of the ratchet arm 54, this allowing rotation of the pay-out reel 41. Hence, the pay-out reel 41 rotates the winding reel 42

via the large and small gears 43, 58, and the used coating film transfer tape 19 is wound by the winding reel 42 automatically. The pay-out speed decreases when the outer diameter of the coating film transfer tape 19 on the pay-out reel 41 becomes smaller as the tool is used, however, the winding speed increases with the outer diameter of the coating film transfer tape 19 on the winding reel 42 getting larger. If this is allowed to continue, the coating film transfer tape 19 is bound to break in time, hence the pay-out speed has to be synchronized with the winding speed.

[0022]

Hence, as the torque acting on the pay-out reel 41 increases, the clutch claws 50 are disengaged from the claws 52 by the elasticity of the clutch arm 51 and the pay-out speed is synchronized with the winding speed with the pay-out cylinder 47 sliding against the outer cylinder 49. Thus, the used coating film transfer tape 19 is smoothly wound automatically.

Needless to say, however, the sliding mechanism is not limited to that described above.

[0023]

[Effects of the device]

Since in this device, as described above, the coating film transfer tape is twisted ahead of the head by 90 ° , the direction of movement of the coating film

transfer tool is perpendicular to the longitudinal direction of the coating film transfer tape. Hence, with both sides of the tool held in a hand, it is possible to do erasing or adhesive coating by moving the tool horizontally with the elbow on the desk top or the like, that is, without lifting the elbow, and therefore, the head of the tool can be located to the desired position accurately and stably. Also, according to the present device, coupled with the prior art, the tool can be worked in two alternative directions, this allowing the operator to have a broader choice of mode of working and giving the diversity to the coating film transfer tool.

[Brief description of the drawings]

[Fig. 1]

A front view of an embodiment of the present device with the lid removed.

[Fig. 2]

A sectional view taken along the line X-X of Fig. 1.

[Fig. 3]

A front view of another embodiment of the device with a portion thereof cut off.

[Fig. 4]

A sectional view taken along the line Y-Y of Fig. 3.

[Fig. 5]

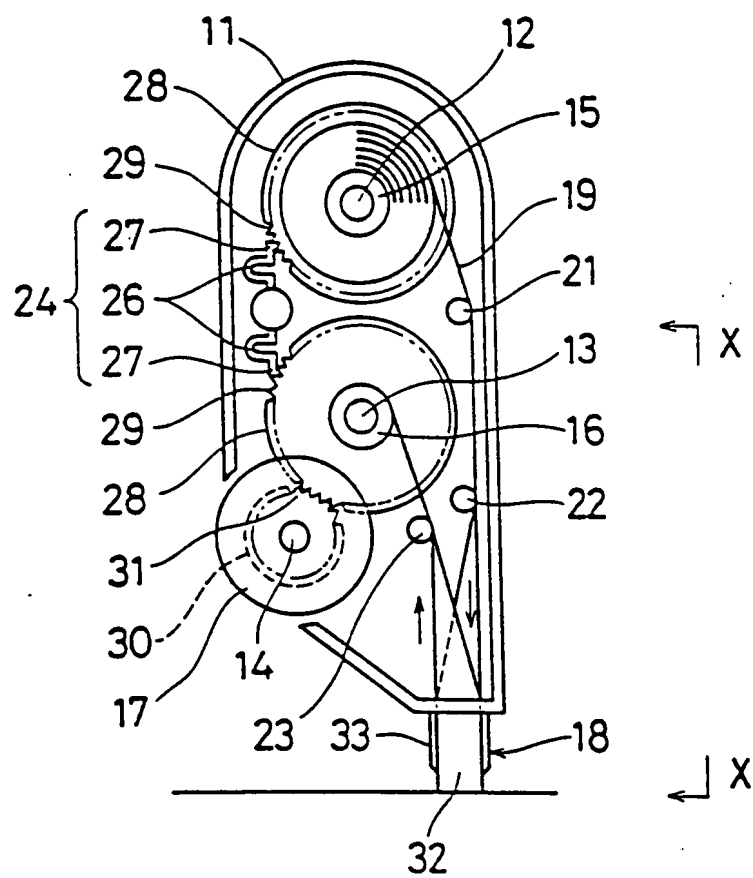
A front view of a clutch arm of the above-mentioned another embodiment.

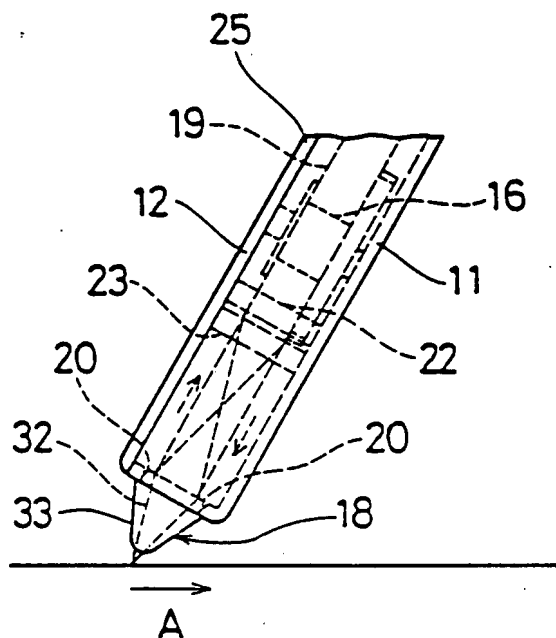
[Fig. 6]

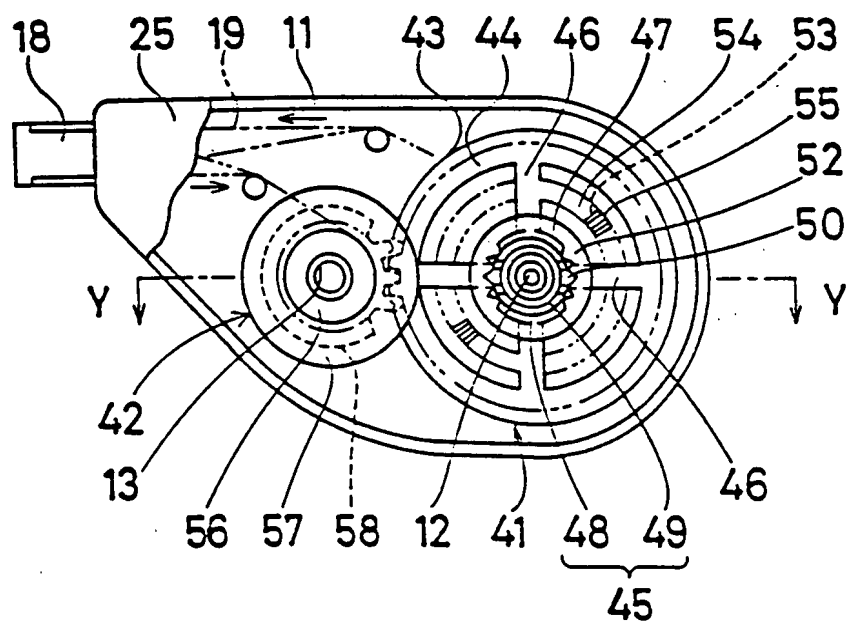
A front view of an example of prior-art coating film transfer tool with the lid removed.

[Explanation of symbols]

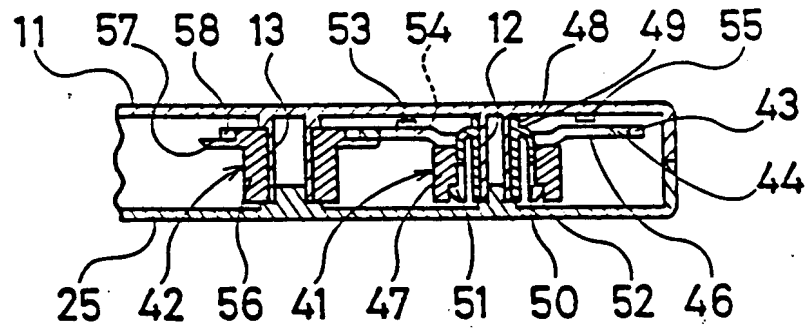
11	case	15	pay-off reel
16	winding reel	18	head
19	coating film transfer tape		
32	peak portion		



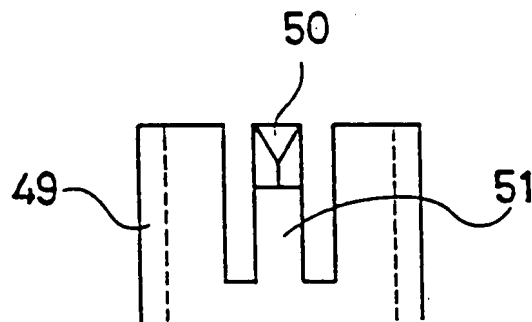


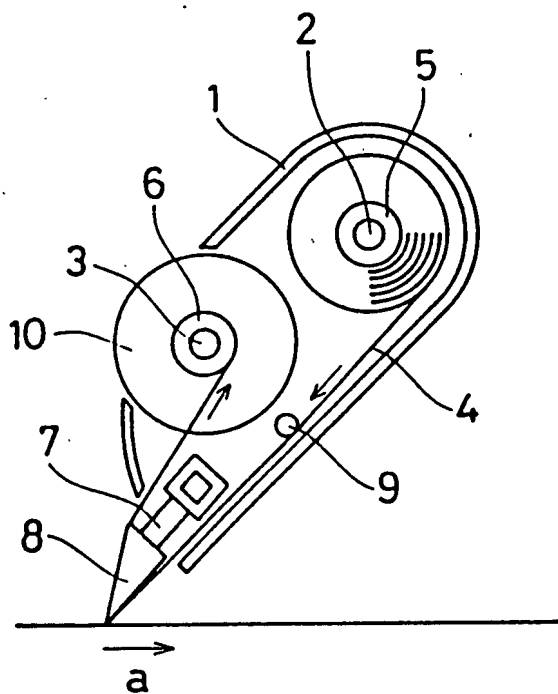


(Fig. 4)



(Fig. 5)





[Document name] Abstract

[Abstract]

[Object]

A coating film transfer tool is provided which is manipulated in a direction perpendicular to that of the conventional one.

[Construction]

A coating film transfer tool comprises a pay-out reel 15 with a coating film transfer tape 19 wound thereon and a winding reel 16 for recovering a used coating film transfer tape 19 disposed in a case 11 and a coating film transfer head 18 projected from one end of the case 11. One end of the coating film transfer tape 19 fed from the pay-out reel 15 is twisted by 90 ° ahead of the head 18 and then past the peak portion 32 of the head 18 is either restored to the original state or further twisted by 90 ° before it is wound by the winding reel 16.

[Effect]

Since the coating film transfer tape 19 is twisted by 90° ahead of the head 18, the working direction of the coating film transfer tool is perpendicular to that of the conventional one. Hence, according to the device, both sides of the tool can be held in a hand and moved horizontally to effect erasing or pasting with the elbow on a desk top, that is, not lifted therefrom, this allowing to

bring the head to the desired position accurately and stably.

[Selected figure] Fig.1